

Attorney's Docket No.: 12258-032001

Client's Ref. No.: InfraReDx-14

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Applicant : Simon M. Furnish  
Serial No. : 10/037,306  
Filed : December 31, 2001

Art Unit : 3763  
Examiner : William C. Jung

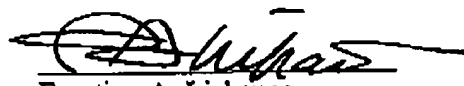
Title : Multi-Fiber Catheter for VP Detection

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Attached to this facsimile communication cover sheet is Request for Reconsideration,  
faxed this 31<sup>st</sup> day of March, 2005, to the United States Patent and Trademark Office.

Respectfully submitted,

Date: March 31, 2005

  
Faustino A. Lichauco  
Reg. No. 41,942

Fish & Richardson P.C.  
225 Franklin Street  
Boston, MA 02110-2804  
Telephone: (617) 542-5070  
Fax: (617) 542-8906

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Attorney's Docket No.: 12258-032001 / InfraReDx-14

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Serial No. : 10/037,306  
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Title : MULTI-FIBER CATHETER FOR VP DETECTION

Art Unit : 3763  
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## REQUEST FOR RECONSIDERATION

## INTERVIEW SUMMARY

Applicant thanks the examiner for his consideration of the Applicant's position in a telephone interview on March 29, 2005 during which Applicant and the Examiner discussed claim 1 and *Winston*.

The Examiner agreed that *Winston's* FIG. 19 failed to disclose a reflective surface. The Examiner also agreed that *Winston's* FIG. 4 showed only a single fiber.

The Examiner's position appears to be that one would readily conceive of replacing the single fiber 30 in FIG. 4 with the multiple fibers 30 of FIG. 19. One would do so because the fibers 30 in FIGS. 4 and 19 all carry out the same function.

Applicant drew attention *MPEP 2131's* discussion of *In re Bond*. It was the Examiner's position however that *In re Bond* did not apply in this case.

## SECTION 102 REJECTION

Applicant requests the Examiner's consideration of an additional limitation of claim 1, namely claim 1's recitation of the relative locations of the two energy bearing fibers and the two

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Applicant : Simon M. Furnish  
Serial No. : 10/037,306  
Filed : December 31, 2001  
Page : 2 of 4

Attorney's Docket No.: 12258-032001 / InfraReDx-14

reflective surfaces. In claim 1, the first fiber is constrained to be adjacent to the first reflective surface and the second fiber is constrained to be adjacent to the second reflective surface. In particular, claim 1 requires

a first flexible, elongated energy bearing delivery fiber having a distalmost end arranged *adjacent said first* reflective surface;

a second flexible, elongated energy bearing collection fiber having a distalmost end arranged *adjacent said second* reflective surface;

As best understood, the Examiner considers the claimed reflective surfaces to correspond to *Winston's* reflector 38 and inclined mirror 70.

If, as the Examiner proposes, one were to replace the single optical fiber 30 in FIG. 4 with the bundle of fibers shown in FIG. 19, the result would be a structure in which *all* the fibers 30 are adjacent to the inclined mirror 70. *None* of the fibers 30 would be adjacent to the reflector 38. Hence, the resulting structure would be unable to meet both of the foregoing claim limitations at the same time.

This distinction between the claimed structure and that obtained by combining FIGS. 19 and 4 of *Winston* is a natural result of differences in their respective functions.

In Applicant's invention, one fiber is a *delivery* fiber and the other fiber is a *collection* fiber. The two fibers carry out *different* functions. This is different from *Winston*, in which all fibers 30 carry out the *same* function.

Applicant's delivery fiber delivers light to an "illumination site" on the arterial wall. Applicant's collection fiber collects scattered light that has passed through a "collection site" on the arterial wall. Because the illumination site and the collection site are at different locations, the two fibers use different mirrors to direct light into and out of the fibers. The mirror adjacent to the collection fiber, (i.e. the "collection mirror") is aimed at the collection site; the mirror adjacent to the delivery fiber (i.e. the "illumination mirror") is aimed at the illumination site.

Applicant : Simon M. Furnish  
Serial No. : 10/037,306  
Filed : December 31, 2001  
Page : 3 of 4

Attorney's Docket No.: 12258-032001 / InfraReDx-14

It is important that the two mirrors point to different sites. To see why, consider the problem of viewing a fish underwater at night. If you were to shine a light and stand directly above the "illumination site," as shown in FIG. 1 of the enclosed exhibit, most of what you would see would be glare. A better way to spot fish would be to have someone else shine the light straight down, to move some distance away, and to peer through a "collection site" as shown in FIG. 2. This would avoid most of the glare and enable one to more clearly see what lies beneath the surface.

Applicant's claimed invention is, of course, not intended to spot fish hidden beneath the surface of water. It is intended to spot vulnerable plaque hidden behind an arterial wall. Applicant has recognized that there exists a similarity between the technical problems in each case. By recognizing a principle at work in the fish-spotting arts and marrying it to the completely unrelated field of vulnerable-plaque detection, Applicant has demonstrated a leap of inventive imagination. This leaf of imagination is brought to fruition in the claimed device.

The proposed *Winston* structure is different. As indicated by *Winston's* FIG. 4, light exiting the fibers 30 bounces off the inclined mirror 70 toward the reflector 38. The light then bounces off the reflector 38, this time in the distal direction. This light path is the same whether the light comes from a single fiber or from multiple fibers.

*Winston* has nothing to do with spotting structures hidden beneath the arterial wall. *Winston* fails to disclose a structure having both a delivery fiber that illuminates a surface and a collection fiber that collects light scattered from structures hidden beneath the surface. In *Winston*, all the fibers 30 are in optical communication with the same general location. Hence, all fibers are adjacent to the same mirror 70.

The Examiner suggests that one would readily replace one fiber with many when all the fibers carry out the same function. This is not the case here. In Applicant's claimed invention, the fibers do *not* carry out the same function at all. Hence, one cannot simply cause them both to point to the same location without undermining the claimed invention's ability to detect vulnerable plaque.

Applicant : Simon M. Furnish  
Serial No. : 10/037,306  
Filed : December 31, 2001  
Page : 4 of 4

Attorney's Docket No.: 12258-032001 / InfraReDx-14

The remaining claims recite limitations similar to those discussed above. Accordingly, the are allowable for at least the same reasons as claim 1.

Based on the foregoing distinction between the claimed invention and the cited art, Applicant requests reconsideration and withdrawal of the section 102 rejection.

### SUMMARY

Now pending in this application are claims 1-38, of which claims 1, 20, and 33 are independent. Claims 9-12, 26-29, and 38 are deemed allowable.

No additional fees are believed to be due in connection with the filing of this request for reconsider. However, to the extent fees are due, or if a refund is forthcoming, please adjust our deposit account 06-1050, referencing attorney docket "12258-032001."

Respectfully submitted,

Date: 3/31/05

  
Faustino A. Lichauco  
Reg. No. 41,942

Fish & Richardson P.C.  
225 Franklin Street  
Boston, MA 02110-2804  
Telephone: (617) 542-5070  
Facsimile: (617) 542-8906

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